Mobile Manufacturers Forum

October 16, 2012

Dr. Rashmi Doshi
Chief, OET Laboratory Division
Federal Communications Commission
7435 Pakland Mills Road
Columbia, MD 21046
United States

Dear Dr Doshi,

**Re: Comment on draft KDB 447498: General RF Exposure Policies for Equipment Authorization**

I write on behalf of the Mobile Manufacturers Forum http://www.mmfai.info/ an international association of telecommunications equipment manufacturers with an interest in mobile or wireless communications.

We wish to place on record our concern with respect to several aspects of the draft KDB 447498. We have also noted several other filings made in relation to this draft that suggest that the separation distance is akin to a "safety distance" which is factually incorrect.

The FCC has established guidelines for maximum SAR for the general population/uncontrolled environment that incorporate a considerable margin of safety below the threshold 'safety' level identified by the relevant standards organizations. For example, ICNIRP and the IEEE C95.1 2005 both agree that the localized SAR threshold for an adverse health effect is 100 W/kg averaged over 10g. The most recent GAO Report recognized that the FCC guideline is "a fiftieth" of this SAR threshold for an adverse health effect. (2012 GAO Report at 16-19.)

Moreover, the actual SAR value of the device while in normal use is usually well below the maximum SAR value specified for the phone, since adaptive power control is constantly adjusting the output power. For example, a recent Swedish study[1] found that after assessing output power from more than 800,000 hours of

[1] Persson et al. *Output power distributions of terminals in a 3G mobile communication network* Article first published online: 19 OCT 2011 | DOI: 10.1002/bem.20710

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voice calls, the average level for 3G or smartphone voice calls was below 1mW across all environments including rural, urban, and dedicated indoor networks. These results were consistent with the findings of an earlier French study[2] of mobile phone use in everyday use, which found that when talking on a mobile phone while walking around a major city or inside city buildings, smartphones typically operate at less than one percent of the phones maximum power output. This equates to 100 times less emissions than the maximum exposure level measured in SAR compliance tests.

Likewise, for devices in stand-by mode and simply being worn on the body without the advised separation distance, the actual SAR is not likely to exceed FCC limits as the phone is only transmitting a short registration signal once every few minutes to remain in contact with the network.

Manufacturers provide information to consumers on the recommended separation distance for using the phone to comply with the FCC limits. Some of the comments to the draft KDB 447498 suggest that consumers use devices in ways other than as recommended and thus may be exposed to RF emissions that exceed the FCC limits. Even assuming for purposes of this letter that there were a risk that these consumers could be exposed to RF emissions exceeding the FCC SAR limits, there is no basis for concluding that devices in compliance with the FCC limit of 1.6 W/kg under current testing requirements would expose consumers to levels of RF that would exceed the safety threshold established by the IEEE in the 1982, 1991, 1999, and 2005 standards or by ICNIRP.

Therefore, the MMF submits that the separation distance does not impact the inherent safety of the device to the consumer. It follows therefore that the MMF is not in favour of any change to existing compliance assessment arrangements with respect to the separation distance. Furthermore, the MMF believes that testing procedures in draft KDB 447498 may be impacted by important policy questions the FCC will likely address in the recently announced Notice of Inquiry. For example, the GAO recommended that the FCC should consider whether to adopt the IEEE's 2005 standard and in doing so harmonize the FCC and ICNIRP standards. (2012 GAO Report at 17.) For this reason, MMF believes that further activity on draft KDB 447498 should await action on the NOI.

The MMF does however support the FCC's requirement for consumer information on the issue. The MMF has recently launched a new website at www.sartick.com designed to provide consumers with a comprehensive resource of SAR and related issues. In conjunction with that, members of the MMF have agreed to new model language to explain SAR and to provide additional information on the head and body SAR for each device and the conditions under which those values were recorded. This information also includes information on the accessories to be used or the separation distance needed to mirror that used for compliance testing. The information will be provided in user documentation or the user manual and on company websites (see Appendix 1). Finally we have also agreed on a model text that, for the more traditional lengthy user guides, can be placed in the first few pages of the manual that provides the consumer with a confirmation of SAR compliance along with guidance on where in the manual to find further

[2] Gati et.al. *Exposure induced by WCDMA Mobile Phones in Operating Networks*, IEEE Trans on wireless communications vol 8 No 12 2009

explanation (see Appendix 2). It should be noted that the text represents a model text that member companies will adapt as necessary.

The MMF would be pleased to make ourselves available for any further discussion on the issues raised herein should you wish to do so.

Yours sincerely,

Michael Milligan
Secretary General

## Appendix 1: Model SAR Explanatory Text for the US.

### THIS DEVICE MEETS FCC GUIDELINES FOR EXPOSURE TO RADIO WAVES

Your mobile device is a radio transmitter and receiver. It is designed not to exceed the guidelines for safe exposure to radio frequency (RF) energy adopted by the FCC based on recommendations by independent scientific expert non-government organizations, such as the Institute of Electrical and Electronics Engineers and the National Counsel on Radiation Protection and Measurements, and input from federal health and safety agencies, such as the FDA. The guidelines include a considerable safety margin designed to assure the safety of all persons, regardless of age and health.

The FCC RF energy exposure guidelines use a unit of measurement known as the Specific Absorption Rate, or SAR. SAR is a measure of the rate of RF energy absorption from the source being measured -- in this case, a mobile device. The SAR limit for mobile devices is 1.6 W/kg. Tests for SAR are conducted using standardized models of the human head and body in various specific positions, including against the head and next to the body (body-worn), with the device transmitting at its highest certified power level in all tested frequency bands. The highest SAR values under the FCC guidelines for this device model are:

| **Maximum SAR for this model and conditions under which it was recorded.** | | |
|---|---|---|
| **Head SAR** | UMTS 1900 + Wi-Fi | x.xx |
| **Body-worn SAR** | GSM 1800 + Wi-Fi +Bluetooth | x.xx |

During normal use, the actual SAR values for this device are usually well below the values stated above. This is because, for purposes of system efficiency and to minimize interference on the network, the operating power of your mobile device is automatically decreased when full power is not needed.

FCC guidelines require body-worn SAR testing to be carried out using an approved accessory or at a separation distance of x.x. cm. When using this product next to your body (other than in your hand or against you head), the device should be in an approved accessory or positioned at least x.x cm away from the body to ensure your use is consistent with how the device is tested for compliance with the FCC RF energy exposure guidelines. If you are not using an approved accessory, ensure that whatever product is used does not contain any metal and that it positions the phone at least x.x cm away from the body -- again, to ensure your use is consistent with how the device is tested.

The FCC and FDA have stated that present scientific information does not indicate the need for any special precautions for the use of mobile devices. But if you are interested in reducing your exposure they state that you can do so by limiting your usage, using a hands-free kit to keep the device away from the head, and by texting rather than talking -- **but don't text while you are driving**.

For more information, see FCC website links: http://transition.fcc.gov/cgb/cellular.html; http://www.fcc.gov/guides/wireless-devices-and-health-concerns; http://www.fcc.gov/guides/specific-absorption-rate-sar-cell-phones-what-it-means-you; and FDA website links: http://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/HomeBusinessandEntertainment/CellPhones/default.htm.

**Appendix 2: Model SAR Tick Text for the US.**


This product meets the applicable FCC SAR guideline of 1.6W/kg when held against the head or at a distance of x.x cm or x/x of an inch from the body. The FCC SAR guideline includes a considerable safety margin designed to assure the safety of all persons, regardless of age and health. The specific maximum SAR values for this product can be found in the xxxx section of this user guide.

www.sartick.com When using the product next to your body (other than in your hand or against your head), either use an approved accessory such as a holster or maintain a distance of x.x cm or x/x of an inch from the body to ensure your use is consistent with how the device is tested for compliance with FCC RF exposure requirements. Note that the product may be transmitting even if you are not making a phone call.